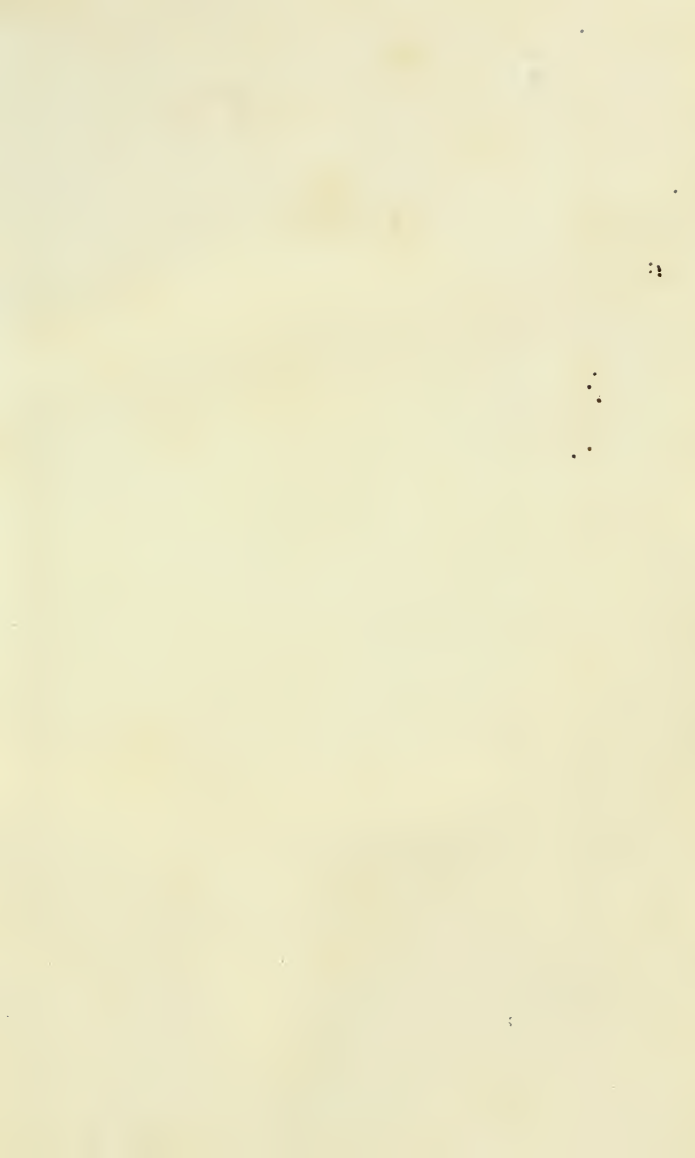




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FROM
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THE
FIRST STEPS
TOWARDS THE
DOMESTICATION OF ANIMALS

BY
FRANCIS GALTON, F.R.S.

To be read before the Ethnological Society (4 St. Martin's Place, 8 P.M.) on Tuesday, Dec. 22, 1863

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THE FIRST STEPS

TOWARDS THE

DOMESTICATION OF ANIMALS.



THE domestication of animals is one of the few relics of the past whence we may justly speculate on man's social condition in very ancient times. We know that the domestication of every important member of our existing stock was originated in pre-historic ages, and, therefore, that our remote ancestors had accomplished in a variety of cases, what we have been unable to effect in any single instance.

The object of my paper is to discuss the character of ancient civilisation, as indicated by so great an achievement. Was there a golden age of advanced enlightenment? Have extraordinary geniuses arisen who severally taught their cotemporaries to tame and domesticate the dog, the ox, the sheep, the hog, the fowl, the camel, the llama, the reindeer, and the rest? Or again, Is it possible that the instincts of savages, combined with the qualities of the animals in question, may have sufficed to originate every instance of established domestication?

It is to be presumed, in the first place, that animals would be originally domesticated in lands where they abounded in a wild state, and where the natives were skilled in capturing them. Unless the animals were easily obtainable, we could hardly expect a sufficient number of experiments to have

been made to yield a successful result. If they had been rare in all places and at all times, they would *ipso facto* be disqualified for domestication; for animals must be hardy and able to multiply freely under varying circumstances, else they would be of no importance as a domestic breed.

Secondly.—It is a fact familiar to all travellers, that savages frequently capture young animals of various kinds, and rear them as favourites, and sell or present them as curiosities. Human nature is generally akin: savages may be brutal, but they are not on that account devoid of our taste for taming and caressing young animals; nay, it is not improbable they may occasionally possess it in a more marked degree than ourselves, because it is a childish taste with us; and the motives of an adult barbarian are very similar to those of a civilised child.

In proving this assertion about taming animals, I feel a difficulty in making a good selection of cases from the published works of travellers. They do not usually think the subject I am speaking of, worthy of detailed mention; and the few interesting anecdotes that exist are scattered sparingly through a vast number of volumes. I have been chiefly indebted in writing this essay to general recollections, which I have not had time to verify, to the conversations of recent travellers, and to the memoranda which many of them have been so kind as to favour me with. Under these circumstances, I shall fortify my statement of the frequency with which animals are reared by savages by selecting out of a large, but not an exhaustive list, a few accounts of cases where they were protected tenderly by the least civilised of races, leaving it to be inferred that the same savages who were capable of much fondness towards animals in particular cases, would not unfrequently show a little of it in others.

North America.—The traveller Hearne, who wrote towards the end of the last century, relates the following story of moose or elks in the more northern parts of North America. He says, ‘I have repeatedly seen moose at Churchill as

tame as sheep and even more so. . . . The same Indian that brought them to the Factory had, in the year 1770, two others so tame, that when on his passage to Prince of Wales's Fort in a canoe, the moose always followed him along the bank of the river; and at night, or on any other occasion when the Indians landed, the young moose generally came and fondled on them, as the most domestic animal would have done, and never offered to stray from the tents.'

Sir John Richardson, in an obliging answer to my enquiries about the Indians of North America, after mentioning the bison calves, wolves, and other animals that they frequently capture and keep, says, 'It is not unusual, I have heard, for the Indians to bring up young bears, the women giving them milk from their own breasts.' He mentions that he himself purchased a young bear, and adds, 'The red races are fond of pets and treat them kindly; and in purchasing them there is always the unwillingness of the women and children to overcome, rather than any dispute about price. My young bear used to rob the women of the berries they had gathered, but the loss was borne with good nature.'

I will again quote Hearne, who is unsurpassed for his minute and accurate narratives of social scenes among the Indians and Esquimaux. In speaking of wolves, he says, 'They always burrow underground to bring forth their young, and though it is natural to suppose them very fierce at those times, yet I have frequently seen the Indians go to their dens, and take out the young ones and play with them. I never knew a Northern Indian hurt one of them; on the contrary, they always put them carefully into the den again; and I have sometimes seen them paint the faces of the young wolves with vermilion or red ochre.'

Africa.—Mr. Mansfield Parkyns, who passed many years in Abyssinia and the countries of the Upper Nile, writes me word, 'I am sure that negroes often capture and keep alive wild animals. I have bought them and received them as presents—wild cats, jackals, panthers, the wild dog, the two best lions

now in the Zoological Gardens, monkeys innumerable and of all sorts, and mongoos. I cannot say that I distinctly recollect any pets among the *lowest* orders of men that I met with, such as the Denkas, but I am sure they exist, and in this way. When I was on the White Nile and at Khartoum, very few merchants went up the White Nile; none had stations. They were little known to the natives; but none returned without some live animal or bird which they had procured from the natives. That the capturing of animals was a very ancient custom may be read from the tombs of the kings in Egypt, where naked negroes from the south are bringing presents to the Pharaoh, among which are various wild beasts. While I was at Khartoum, there came an Italian wild beast showman, after the Wombwell style. He made a tour of the towns up to Douk and Fazogly, Kordofan and the peninsula, and collected a large number of animals. Thus my opinion distinctly is, that negroes do keep wild animals alive. *I am sure of it*; though I can only vaguely recollect them in one or two cases. I remember some chief in Abyssinia who had a pet lion which he used to tease, and I have often seen monkeys about huts.'

On the West African Coast there is a busy trade in live birds and monkeys. Dr. Murie writes me word, 'While at the island of Corisco and its neighbourhood, on the West Coast of Africa, I saw grey parrots, a small species of baboon, and marmoset monkeys kept by the negroes. While they retained them, their children played with them as pets, but I believe their object in capturing them was for sale, for they found a ready market among the sailors in the shops frequenting that coast.'

In Mr. Murie's recent journey in company with Mr. Petherick by the side of the White Nile, young live animals were frequently brought to their camp for sale.

In Central Africa, as at Kouka, antelopes and ostriches are both kept tame; so I am informed by Dr. Barth.

In South Africa, I have heard of numerous instances

where zebras and antelopes were reared by half-castes, and, as I fully believe but cannot distinctly assert, by blacks also. I should, however, state, that Mr. Oswell's recollections do not confirm my belief. Unfortunately, I cannot obtain further evidence, as Dr. Livingstone and most other South Africaⁿ travellers are now absent from England.

There are instances in Africa where other motives induce the natives to protect and partly tame animals, besides that of caressing them. Serpents of large size, and I know not what other creatures, are held sacred in the delta of the Niger and elsewhere. They go about the villages with impunity and are fed by the people. The most remarkable instance of all is the account by Captain Speke of a menagerie that existed up to the beginning of the reign of the present king of the Wahumas, on the shores of Lake Nyanza, which was first established some centuries ago. It reminds us of the great menageries of the ancient Mexican kings and our own Zoological Gardens.

Eastern Archipelago.—Mr. Wallace, the distinguished naturalist and traveller in the Eastern Archipelago, writes me word, ‘The rudest people I have seen, catch and tame birds, but more, I think, for sale and profit than for love of them. In this respect the Malay races are superior to the Papuan. The former keep parrots, monkeys, &c., as *pets*, and will often not part with them; whereas the Papuans catch immense quantities of birds, such as cockatoos and parrots, but sell them readily.’

South America.—Mr. Wallace also adds from his South American recollections, ‘In the interior of South America, the Uapes Indians rear great numbers of birds and monkeys. The women carry the monkeys continually on their heads when very young, and even suckle them; the only way in which many kinds can be reared.’ This is confirmed by the following extract from a report on the savage tribes of the Amazon, made to the Viceroy of Peru in 1796. I am indebted for it to Mr. Markham, the South American

traveller. It states, 'Just as the Spanish ladies are fond of having little dogs as pets, the Omagua women amuse themselves by taming monkeys, the smallest and prettiest they can get.'

Central Asia.—Mrs. Atkinson, the widow of the Siberian traveller and the companion of his journeys, tells me that the Kirghis occasionally rear antelopes; she herself had one given to her.

It would be tedious and unnecessary to adduce more instances of wild animals being nurtured in the encampments of savages. It will be found on enquiry that few travellers have failed altogether to observe them. If we consider the small number of encampments they severally visited in their line of march, compared with the vast number that are spread over the whole area, which is or has been inhabited by savages, we may obtain some idea of the thousands of places at which half unconscious attempts at domestication are being made in each year. These thousands must themselves be multiplied many thousand-fold, if we endeavour to calculate the number of similar attempts that have been made since men like ourselves began to inhabit the world.

Conditions of Domestication.—I conclude from what I have stated that there is no animal worthy of domestication that has not frequently been captured, and might ages ago have established itself as a domestic breed, if it had not been deficient in certain necessary particulars which I shall proceed to discuss. These are so numerous and so stringent as to leave no ground for wonder that out of the vast abundance of the animal creation, only a few varieties of a few species should have become the companions of man.

It by no means follows that because a savage cares to take home a young fawn to amuse himself, his family, and his friends, that he will always continue to feed or to look after it. Such attention would require a steadiness of purpose foreign to the ordinary character of a savage. But herein

lie two shrewd tests of the eventual destiny of the animal as a domestic species.

Hardiness.—First, it must be able to shift for itself and to thrive, although it is neglected; since, if it wanted much care, it would never be worth its keep.

Fondness for Man.—Secondly, it must cling to man, notwithstanding occasional hard usage and frequent neglect. If the animal had no natural attachment to our species, it would fret itself to death, or escape and revert to wildness.

It is certain that some animals have naturally a less dread of or dislike to man than others; and as a proof of this, I will again quote Hearne about the moose, whose idiosyncrasies are very much to the point in various stages of my enquiry, and are considered by him to be the easiest to tame and domesticate of any of the deer tribe. Formerly the closely allied European elks were domesticated in Sweden, and used to draw sledges; but they have been obsolete for many years. Hearne says, ‘The young ones are so simple that I remember to have seen an Indian paddle his canoe up to one of them, and take it by the poll, without experiencing the least opposition, the poor harmless animal seeming at the same time as contented alongside the canoe as if swimming by the side of its dam, and looking up in our faces with the same fearless innocence that a house lamb would.’

It is interesting to note the causes that conduce to a decided attachment of certain animals to man, or between one kind of animal and another. It is notorious that attachments and aversions exist in nature. Swallows and storks frequent dwelling houses; zebras and gnus herd together; so do bisons and elks. On the other hand, deer and sheep, which are both gregarious, and both eat the same food and graze within the same enclosure, avoid one another. The spotted Danish dog, the Spitz dog and the cat have all a strong attachment to horses, and horses seem pleased with

their company ; but dogs and cats living in the same room are proverbially discordant. I presume that two species of animals do not consider one another companionable, or clubbable, unless their behaviour and their persons are reciprocally agreeable. A phlegmatic animal would be exceedingly disquieted by the close companionship of an excitable one. The movements of one beast may have a character that is displeasing to the eyes of another ; his cries may sound discordant ; his smell may be repulsive. Two herds of animals would hardly intermingle, unless their respective languages of action and of voice were mutually intelligible. The animal which, above all others, is a companion to man is the dog, and we observe how intelligible their proceedings are to each other. Every whine or bark of the dog, each of his fawning, savage, or timorous movements is the exact counterpart of what would have been the man's behaviour, had he felt similar emotions. As the man understands the thoughts of the dog, so the dog understands the thoughts of the man, by watching his voice, his countenance, and his actions. A man can irritate a dog by laughing at him, he can frighten him by an angry look, or calm him by a kindly bearing ; but he has less hold over an ox or a sheep, and none at all over many other animals. Who, for instance, ever succeeded in frowning away a musquito, or in pacifying an angry wasp by a winning smile ?

Desire of Comfort.—There is an additional motive to those we have considered, which strongly attaches certain animals to human habitations, even though they are unwelcome : it is a motive which few persons who have not had an opportunity of studying animals in savage lands are likely to estimate at its true value. The life of all beasts in their wild state is an exceedingly anxious one. From my own recollection, I believe that every antelope in South Africa has literally to run for its life once in every one or two days upon an average, and that he starts or gallops under the influence of a false alarm many times in a day. Those who

have crouched at night by the side of pools in the desert, in order to have a shot at the beasts which frequent them, see strange scenes of animal life ; how the creatures gambol at one moment and fight at another ; how a herd suddenly halts in strained attention, and then breaks into a maddened rush, as one of them becomes conscious of the stealthy movements or rank scent of a beast of prey. Now this hourly life and death excitement is a keen delight to most wild creatures, but must be peculiarly distracting to the comfort-loving temperament of others. The latter are alone suited to endure the crass habits and dull routine of domesticated life. Suppose that an animal which has been captured and half-tamed, received ill-usage from his captors, either as punishment or through mere brutality, and that he rushed indignantly into the forest with his ribs aching from blows and stones. If a comfort-loving animal, he will probably be no gainer by the change, more serious alarms and no less ill-usage awaits him : he hears the roar of the wild beasts, and the headlong gallop of the frightened herds, and he finds the buttings and the kicks of other animals harder to endure than the blows from which he had fled : he has peculiar disadvantages from being a stranger ; the herds of his own species which he seeks for companionship constitute so many closed cliques, into which he can only find admission by more fighting with their strongest members than he has spirit to undergo. As a set-off against these miseries, the freedom of savage life has no charms for his temperament ; so the end of it is, that with a heavy heart he turns back to the habitation he had quitted. When animals thoroughly enjoy the excitement of wild life, I presume they cannot be domesticated, they could only be tamed, for they would never return from the joys of the wilderness after they had once tasted them through some accidental wandering.

Usefulness to Man.—To proceed with the list of requirements which a captured animal must satisfy before it is possible he could be permanently domesticated : there is the

very obvious condition that he should be useful to man; otherwise, in growing to maturity, and losing the pleasing youthful ways that had first attracted his captors and caused them to make a pet of him, he would be repelled. As an instance in point, I will mention seals. Many years ago, I used to visit Shetland, when those animals were still common, and I heard many stories of their being tamed: one will suffice:—A fisherman caught a young seal; it was very affectionate and frequented his hut, fishing for itself in the sea. At length it grew self-willed and unwieldy; it used to push the children and snap at strangers; at last it was voted a nuisance, but the people could not bear to kill it on account of its human ways. One day the fisherman took it with him in his boat, and dropped it in a stormy sea, far from home; the stratagem was unsuccessful; in a day or two the well-known scuffling sound of the seal as it floundered up to the hut was again heard; the animal had found its way home. Some days after, the poor creature was shot by a sporting stranger, who saw it basking, and did not know it was tame. Now had the seal been a useful animal and not troublesome, the fisherman would doubtless have caught others, and set a watch over them, to protect them; and then, if they bred freely and were easy to tend, it is likely enough he would have produced a domestic breed.

An animal may be useful as a domestic animal, and yet the circumstances in which the savages are living may make it too troublesome for them to maintain a breed. The following account, taken from Mr. Scott Nind's paper on the Natives of King George's Sound, in Australia, and printed in the first volume of the *Journal of the Geographical Society*, is particularly to the point. He says, 'In the chase the hunters are assisted by dogs, which they take when young and domesticate; but they take little pains to train them to any particular mode of hunting. After finding a litter of young, the natives generally carry away one or two to rear; in this case, it often occurs that the mother will

trace and attack them; and being large and very strong, she is rather formidable. When they are puppies, between six and twelve months old, they are used to hunt lizards and bandicoots; previous to this, they are consigned to the care of the women. At some periods, food is so scanty as to compel the dog to leave his master and provide for himself, but in a few days he generally returns.'

Nature of Usefulness.—We will now consider the qualities which are likely to render a collection of tamed animals useful in the eyes of a savage.

As Food.—Their utility as a store of future food, though undoubtedly the most durable reason for maintaining them, was probably not so early a motive as the chief's *pleasure in possessing* them. Whatever the despot of savage tribes is pleased with, becomes invested with a sort of sacredness. His tame animals would be the care of all his people, who would become skillful herdsmen under the pressure of fear. It would be as much as their lives were worth if one of the creatures were injured through their neglect. I believe that the keeping of a herd of beasts, with the sole motive of using them as a reserve for food, or as a means of barter, is a late idea in the history of civilisation. It has now become established among the pastoral races of South Africa, owing to the traffickings of the cattle traders, but it was by no means prevalent in Damara-Land when I travelled there twelve years ago. I then was surprised to observe the considerations that induced the chiefs to take pleasure in their vast herds of cattle. They were valued for their stateliness and colour far more than for their beef. They were as the deer of an English squire, or as the stud of a man who has many more horses than he can ride. An ox was almost a sacred beast in Damara-Land, not to be killed except on momentous occasions, and then as a sort of sacrificial feast, in which all bystanders shared. The payment of two oxen was hush money for the life of a man. I was considerably embarrassed by finding that I had the greatest trouble in

buying oxen for my own use, with the ordinary articles of barter. The possessors would hardly part with them for any remuneration; they would never sell their handsomest beasts.

Milk.—Another way in which the value of tamed beasts would be soon found out, would be in their giving milk to children. It is marvellous how soon goats find out children and tempt them to suckle. I have had the milk of my goats drained dry by small black children, who had not the strength to do more than crawl about, but nevertheless came to some secret understanding with the goats and fed themselves. The records of many nations have legends like that of Romulus and Remus, who were suckled by wild beasts.

I think I have now shown sufficient cause for the maintenance of a herd of tamed animals by savages, supposing it was not difficult to rear them and possible to tend them.

Breeding freely.—1st. They could not be reared easily unless they breed freely under domestication. This necessity limits very narrowly the number of species which might otherwise have been domesticated. I have already alluded to it, as one of the most important of all the conditions that must be satisfied.

Easy to tend.—2ndly. They must be tended easily. When animals reared in the house are suffered to run about in the companionship of others like themselves, they naturally revert to much of their original wildness. It is therefore essential to domestication that they should possess some quality by which large numbers of them may be controlled by a few herdsmen. The instinct of gregariousness is such a quality. The herdsman of a vast troop of oxen grazing in the forest, if he sees one of them, knows pretty surely that they are all in reach. If they are frightened and gallop off, they do not scatter, but are manageable as a single body. When animals are not gregarious, they are to the herdsman like a falling necklace of beads whose string is broken, or as a handful of water escaping between the fingers.

The gregariousness of all our domestic species is, I think, the primary reason why many of them are extinct in a wild state. The wild herds would intermingle with the tame ones, some would become absorbed, the others would be killed by hunters, who used the tame cattle as a shelter to approach the wild. Besides this, comfort-loving animals would be less suited to fight the battle of life with the rest of the brute creation, and it is therefore to be expected that those varieties which are best fitted for domestication would be the soonest extinguished in the wild state. For instance, we could hardly fancy the camel to endure in a land where there were large wild beasts.

Some people are put to great straits to tend their cattle. They may be too precious to be discarded, but very troublesome to look after. Such are the Lapps with their reindeer. Mr. Campbell of Islay informs me that the tamest of certain herds of them, look as if they were wild: they have to be caught with a lasso to be milked. If they take fright, they are off to the hills; consequently the Lapps are forced to accommodate themselves to the habits of their beasts, and follow them from snow to sea and from sea to snow at different seasons. The Peruvian herdsmen would have had equal trouble to endure had the llama not existed, for its congeners, the alpaca, the huanacu, and the vicuna, are hardly to be domesticated.

Recapitulation.—I will shortly recapitulate what appear to be the conditions under which wild animals may become domesticated:—1, they should abound in a wild state; 2, the natives should be hunters; 3, the animals should be hardy; 4, they should have an inborn liking for man; 5, they should be comfort-loving; 6, they should be found useful to the savages; 7, they should breed freely; 8, they should be gregarious.

I believe that every animal has had its chance of being domesticated, and that those which fulfilled the above conditions were domesticated long ago. It would follow as a

corollary to this that the animal creation possesses no more animals worthy of domestication, at least for such purposes as savages care for.

Elephant.—An apparent exception to my reasoning lies in the fact that the African elephant is now untamed. Whatever the negroes may have done in ancient times, either for their own purposes or for those of the Phenicians, it is certainly not domesticated, nor even kept alive at the present time. There are probably few bolder elephant hunters than the Africans, but they are not elephant tamers. How is it that the Hindoos domesticate when the Africans do not, if we assume that domestication has always been performed by savages? The answer is easy. I doubt if the first domestication of the Indian elephant took place in savage times, and I am sure that three of my conditions are not fulfilled in Africa. First, elephants are not sufficiently abundant; nor, secondly, is the character of the country such as to admit of their easy capture. Africa is different from Ceylon, where the elephants swarm in dense forests, in which palisadings can easily be erected for catching them, and woodbines found for lashing them after they are caught. Africa is on the whole a bare and open country, over which the elephants migrate. There are few places where stockades could be erected with a chance of being used with frequent success. Thirdly, the animal would be useless to savages, especially in Africa. It is mostly a land of upland grassy plains, excellent for oxen, which abound, but not at all suited for elephants, who could only obtain their living by ravaging in the woods. An African who had a young elephant could not maintain it. India is differently circumstanced: there the maintenance of the elephant is easy. I should explain their domestication in India in this way. The taste of an Oriental prince in remote times would be gratified by the monstrous sight of an imprisoned elephant. It would be a spectacle of terror to his people. It would have been as obvious, then as now, to make the huge creature

the executioner of men condemned to death. There is as much reason that the frequent capture of elephants should be ordered by an Indian prince, for the display of his tyranny, as that a Caffre chief, like Dingaan, should order his young men to take lions alive. The experience of elephant captors would soon bring to light the curious physiological trait of that animal, which is shared in some degree by the horse, of yielding an abrupt and permanent submission to the man who first vanquished him.

To conclude. I see no reason to suppose that the first domestication of any animal, except the elephant, implies a higher civilisation among the people who established it, than that of barbarian hunters. I cannot believe it to have been the result of a preconceived intention, followed by elaborate trials, to administer to the comfort of man. Neither can I think it arose from one successful effort made by an individual, who might thereby justly claim the title of benefactor to his race; but, on the contrary, that a vast number of half unconscious attempts have been made throughout the course of ages, and that ultimately, by slow degrees, after many relapses, and continued *selection*, our several domestic breeds became firmly established.

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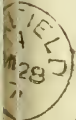
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Saurians, whose skeletons are often preserved in the Lias. I fear that the sequel will show that the voracity of the Saurian in the matter of diet has not been



J. F. Campbell
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